

REMARKS

This Amendment is submitted in response to the Non-Final Office Action dated April 21, 2010. Claims 29-32 and 37-39 are pending in the present application. Claims 29-32 and 37-39 are rejected in the present application. The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing. Applicants respectfully disagree and traverse the rejections, as set forth in detail below.

The Office Action rejected Claims 29-32 and 37-39 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,890,676 to Nuber et al. ("Nuber"). Of the rejected claims, Claims 29 and 37 are the sole independent claims. Claim 29 recites, at least in part, a composition comprising a ion-dissociative functional compound represented by a chemical formula as follows: $C_m-(CF_2-Gp1)_n$ where, m is a natural number for carbon atoms to form a spherical carbon molecule; n is a natural number; and Gp1 denotes an ion-dissociative group. Claim 37 recites, at least in part, a composition comprising an ion-dissociative functional compound having a linkage structure represented by a chemical formula as follows: $C_m-CF_2-Gp2-CF_2-C_m$ where, m is a natural number for carbon atoms to form a spherical carbon molecule; and Gp2 denotes an ion-dissociative group. However, Nuber fails to disclose each of the elements of Claims 29 and 37.

The Nuber reference, which is discussed in some detail in the Background section of the present application (see, Specification, pg. 3 referring to JP 2002-28642), requires a spacer molecule. In particular, Nuber discloses that "[t]he present invention is embodied in a fullerene molecule having attached thereto at least one spacer molecule that, in turn, is attached to a proton conductive functional group." (See, Nuber, col. 3, lines 59-61). The Office Action relies on the "spacer molecule CF_2 taught by Nuber et al. corresponds to the instant claimed C_m ." (See, Office Action, pg. 3). However, this is not the case where the presently claimed C_m is a spherical carbon molecule such as fullerene, as further recited in dependent Claim 30.

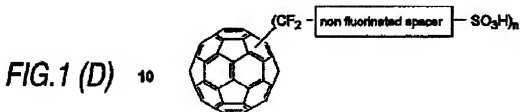
Moreover, the present claims do not recite a spacer molecule and require only a single CF_2 group between the spherical carbon molecule and the ion-dissociative group, whereas every example disclosed in Nuber either: (a) includes a plurality of fluorinated groups between the fullerene molecule and each proton conductive functional group; or (b) includes a non-fluorinated spacer between the fullerene molecule and the proton conductive functional group.

Neither (a) or (b) read on the present claims. For example, Fig. 1A of Nuber shown below includes four different fluorinated groups.



Nuber discloses that “[g]enerally, the more fluorine atoms in a spacer molecule, the more stable it will be” and “[p]resently, $\text{CF}_2\text{-CF}_2\text{-O- CF}_2\text{-CF}_2$ is preferred because it is very stable, as is readily commercially available.” (See, Nuber, col. 4, line 67 to col. 5, line 4). Each of the remaining examples in Nuber not including a non-fluorinated spacer consistently include a plurality of CF_2 groups.

With regard to the examples that appear to only include a single CF_2 group, as shown below in Figs. 1C and 1D, these examples also include a non-fluorinated spacer between the fullerene and the proton conductive functional group, which is not recited in the present claims. Similar arguments apply to the linkage structure recited in presently presented Claim 37, where only one CF_2 group is between each Gp_2 group and its respective spherical carbon molecule.




Therefore, Nuber fails to anticipate Claims 29 and 37 and dependents thereof for at least the reasons discussed above. Accordingly, Applicants respectfully request that the 35 U.S.C. §103(a) rejection of Claims 29-32 and 37-39 be withdrawn.

For at least the reasons above, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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